

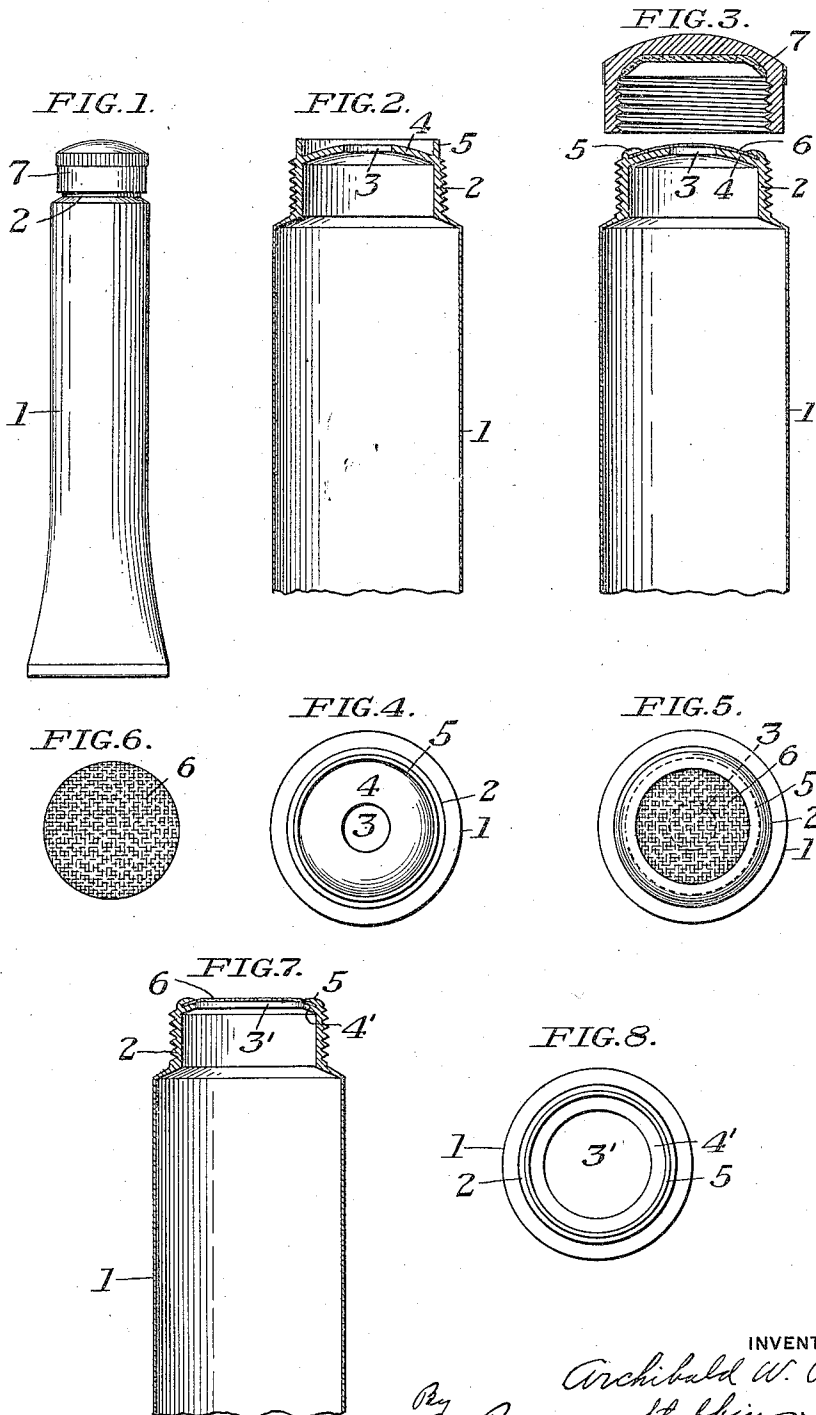
Jan. 22, 1924.

1,481,733

A. W. PAULL

CONTAINER

Filed Jan. 19, 1923



INVENTOR

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By Byrnes, Stebbins & Bernick
His Attys

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UNITED STATES PATENT OFFICE.

ARCHIBALD W. PAULL, OF WHEELING, WEST VIRGINIA, ASSIGNOR TO WHEELING STAMPING COMPANY, OF WHEELING, WEST VIRGINIA, A CORPORATION OF WEST VIRGINIA.

CONTAINER.

Application filed January 19, 1923. Serial No. 613,641.

To all whom it may concern:

Be it known that I, ARCHIBALD W. PAULL, a citizen of the United States, residing at Wheeling, county of Ohio, and State of West Virginia, have invented a new and useful Improvement in Containers, of which the following is a full, clear, and exact description.

The present invention relates broadly to containers, and more particularly to containers of the type usually referred to as collapsible tubes.

It has heretofore been proposed in the art to which this invention belongs to provide a collapsible tube with foraminous means extending across its discharge orifice for spreading or distributing the contents of the tube. It has also been proposed to provide a slip cover for the discharge orifice and distributing means, such cover frictionally engaging the walls of the tube adjacent the neck thereof. It was found, however, with constructions of this character, that once the tube was put in use, a certain proportion of the contents thereof remained in the meshes of the distributing means, and that this material tended to rapidly dry out and become hard and caky, thereby preventing the further efficient functioning of the tube. The slip cover did not provide an effective protection against the drying effect of the air. Moreover, the walls of the tube adjacent the discharge end readily became deformed, so that the slip cover would not fit the tube tightly enough to prevent the infiltration of air to the distributing means.

The present invention aims to overcome the difficulties above referred to by the particular construction hereinafter described.

The invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a view in elevation of a complete tube constructed in accordance with one embodiment of my invention.

Figure 2 is a sectional view illustrating the construction of the mouth of the tube at one stage in the manufacture thereof and prior to the application thereto of the foraminous distributing means.

Figure 3 is a sectional view similar to Figure 2 illustrating the construction after the distributing means has been applied

and secured in position, and also illustrating in section the cooperating cap member.

Figure 4 is an end view of the construction illustrated in Figure 2.

Figure 5 is an end view of the tube shown in Figure 3.

Figure 6 is a plan view of the distributing member.

Figures 7 and 8 are views similar to Figures 3 and 4 of a modified form of my invention.

Referring to the construction illustrated in Figures 1 to 6 inclusive, my improved tube comprises a body portion 1 provided at one end thereof with a relatively long screw threaded neck portion 2 of slightly reduced diameter having a relatively small discharge orifice 3 in the end wall 4 thereof. As shown in Figure 2, a flange 5 extends vertically above the end wall 4.

The distributing means is shown in Figure 6 and consists of a piece of foraminous material 6, such as cloth, of a size to fit within the flange 5. This distributing member is placed on the end wall 4 and then the flange 5 is wiped or peened over upon the member so as to cause the peripheral edge of the latter to be firmly gripped and held between the flange 5 and end wall 4. It will be understood that the tube is made of soft metal or similar material, and in wiping or peening the flange 5 over upon the member 6, said flange is tapered to a thin edge, so that it merges smoothly with the surface of the foraminous distributing member.

A screw threaded cap 7 is provided for detachably engaging the neck portion 2 for covering and protecting the discharge orifice 3 and the distributing member 6. The threaded engagement of the cap 7 with the neck 2 tends to prevent the infiltration of air to the distributing member, so that the material that has been forced out of the tube through the orifice 3 and which is held in the meshes of the foraminous distributing member, and also the material which is held between the end wall 4 and the distributing member, is thus protected from the drying effect of the air. In order, however, to insure the retention of the moisture in this material, the cap 7 is provided with a lining member 8 of cork or similar material,

which, when the cap is screwed on to the neck, is brought into firm engagement with the foraminous distributing member 6 and flange 5 and effectively seals the said member 6.

In the modified construction shown in Figures 7 and 8, the discharge orifice 3' is greatly enlarged and the end wall 4' is in the form of a narrow flange corresponding to the flange 5. The advantage of this construction lies in the fact that in using the tube, none of the contents thereof will be forced out between the end wall and the distributing member, so that there will not be formed between the end wall and the distributing member a layer of material adapted to become hard and caky if left exposed to the drying effect of the air.

It will be noted that in both forms of construction, the walls of the neck of the tube and of the flange joining the neck to the body 1, are made considerably thicker than the walls of the body 1. The purpose of this construction is to avoid the possibility of the neck portion of the tube and the end portion thereof adjacent the neck from becoming deformed when the tube is in use, so that the cap will always have a tight engagement with the neck portion.

The advantages of the present invention arise from the provision of a sealing member in the detachable cap for cooperation with the foraminous distributing means, and in the provision of a threaded engagement between the cap and neck portion of the tube for preventing the infiltration of air to the distributing means.

Further advantages arise from the thickened construction of the walls of the neck

portion of the tube, and from the particular method of securing the distributing means in position.

I claim:

1. A collapsible tube having a discharge orifice in an end wall thereof, foraminous distributing means engaging said end wall and extending across said discharge orifice, and a flange integral with said tube, the peripheral edge portion of said distributing means being held between said flange and end wall, substantially as described.

2. The method of making a collapsible tube, comprising providing a tube having an aperture in an end wall thereof and an integral upstanding flange surrounding said orifice, arranging a foraminous distributing member on said end wall to extend over said discharge orifice, and then bending said flange over upon said distributing member to grip the peripheral edge portion of the latter between said end wall and flange, substantially as described.

3. A collapsible tube having a discharge orifice, foraminous distributing means extending across said discharge orifice, a flange integral with said tube adjacent said orifice, the peripheral edge portion of said distributing means being held between said flange and a wall of the tube, a detachable cap for covering and protecting said distributing means, and means within said cap adapted to engage said flange and seal said distributing means, substantially as described.

In testimony whereof I have hereunto set my hand.

ARCHIBALD W. PAULL.